US007168190B1

(12) **United States Patent**
Gillespie

(10) **Patent No.: US 7,168,190 B1**
(45) **Date of Patent: Jan. 30, 2007**

(54) **COLLAPSIBLE SHOE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/197,256**

(22) Filed: **Jul. 18, 2002**

(51) **Int. Cl.**
A43B 1/10 (2006.01)

(52) **U.S. Cl.** **36/102**; 363/103; 363/31

(58) **Field of Classification Search** .... 36/100, 36/102, 103, 88, 8.3, 9 R, 9 A, 8.1, 31, 7.1 R, 36/7.3

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

500,385 A * 6/1893 Hall 36/102
2,155,166 A 4/1939 Kraft
2,188,168 A 1/1940 Winkel
2,224,590 A * 12/1940 Boivin .... 36/3 B
2,860,425 A * 11/1958 Jackson 36/7.3
3,148,378 A * 9/1964 Tibbitts 2/239
3,634,954 A * 1/1972 Larsen et al. 36/7.3
3,648,109 A * 3/1972 Tims et al. 361/223
3,724,107 A * 4/1973 Makinen et al. 36/7.3
3,762,075 A * 10/1973 Munschy 36/97
4,043,326 A * 8/1977 Little et al. 602/3
4,265,032 A 5/1981 Levine
4,309,831 A * 1/1982 Pritt .... 36/3 B
4,309,832 A * 1/1982 Hunt .... 36/32 R
4,443,511 A * 4/1984 Worden et al. 428/198
4,516,336 A * 5/1985 Nissenbaum .... 36/7.1 R
4,631,755 A * 12/1986 Zingg et al. 2/239
D288,027 S 2/1987 Tonkel
RE33,018 E * 8/1989 Ostrander 36/102
4,908,964 A 3/1990 Deem
4,944,099 A * 7/1990 Davis 36/97
5,265,349 A * 11/1993 Munschy 36/97
5,548,910 A * 8/1996 Klingseis 36/135
5,584,077 A * 12/1996 Thrift 2/239
D378,472 S 3/1997 Bramani
5,832,539 A * 11/1998 Williams 2/239
5,956,868 A * 9/1999 Stevens et al. 36/8.3
D421,832 S 3/2000 Loveder
6,052,921 A 4/2000 Oreck
6,061,929 A * 5/2000 Ritter 36/107
6,115,945 A 9/2000 Ellis, III
6,128,835 A * 10/2000 Ritter et al. 36/45
6,298,583 B1 * 10/2001 Allen 36/100
6,367,166 B1 * 4/2002 Barthelemy et al. .... 36/3 R
6,584,704 B2 * 7/2003 March .... 36/7.1 R
6,634,121 B2 * 10/2003 Sordi 36/102
D492,095 S * 6/2004 Sanchez et al. D2/896

OTHER PUBLICATIONS

KICKSstyle The International Street Magazine, pp. 54-55 (Aug. 20, 2001) [with translation of p. 55].

* cited by examiner

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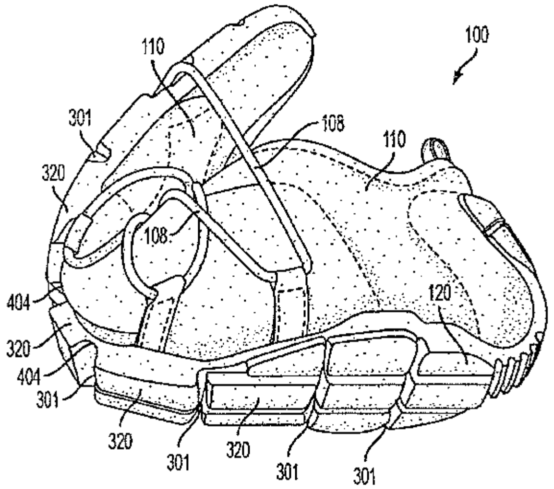
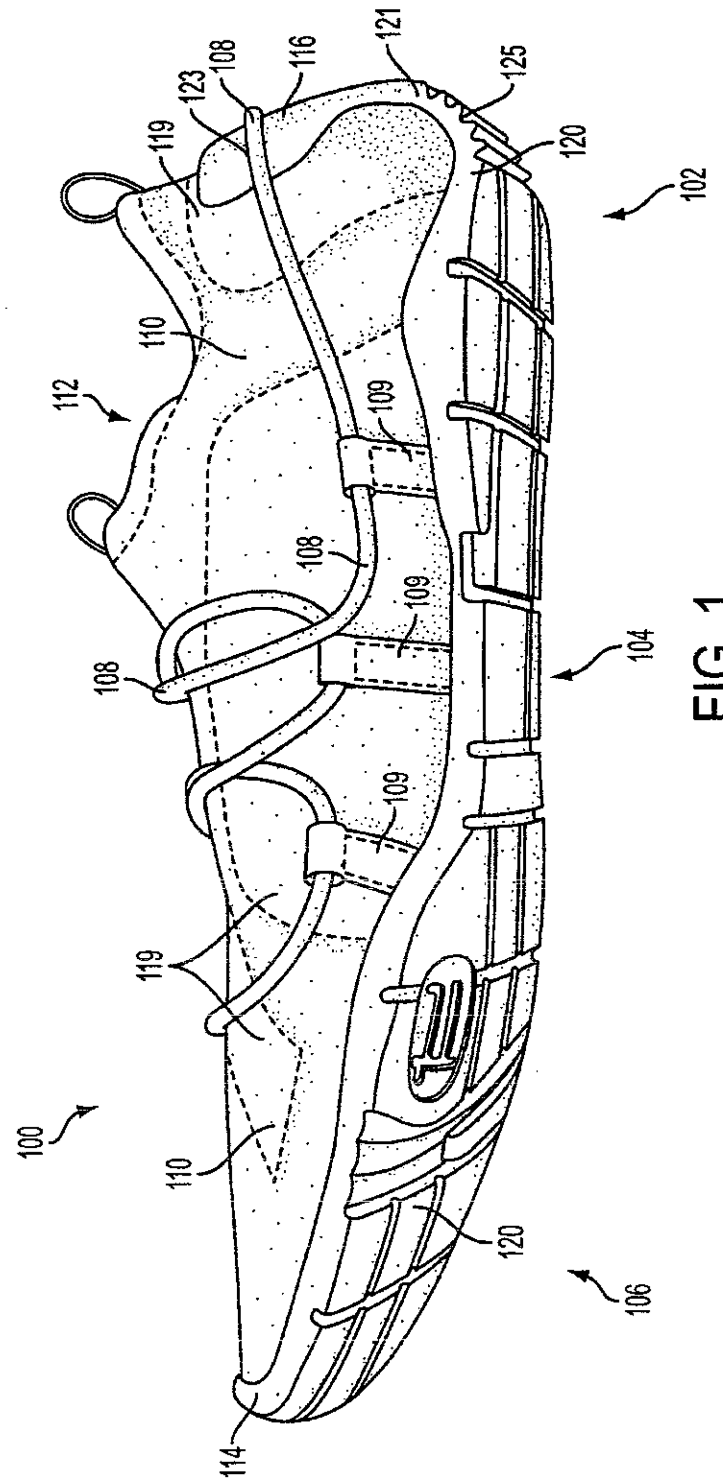
(57) **ABSTRACT**

An article of footwear including an upper formed of a flexible upper material and a sole formed of a flexible sole material, wherein the sole is rolled, folded, or collapsed onto itself to reduce the volume of the article of footwear. The article of footwear in a collapsed state can then be packaged in a container. This container can be dispensed by a vending machine in a convenient urban area.

13 Claims, 8 Drawing Sheets

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125
116
108
123
119
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102
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112
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108
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104
108
109
119
100
110
120
106
114

FIG. 1

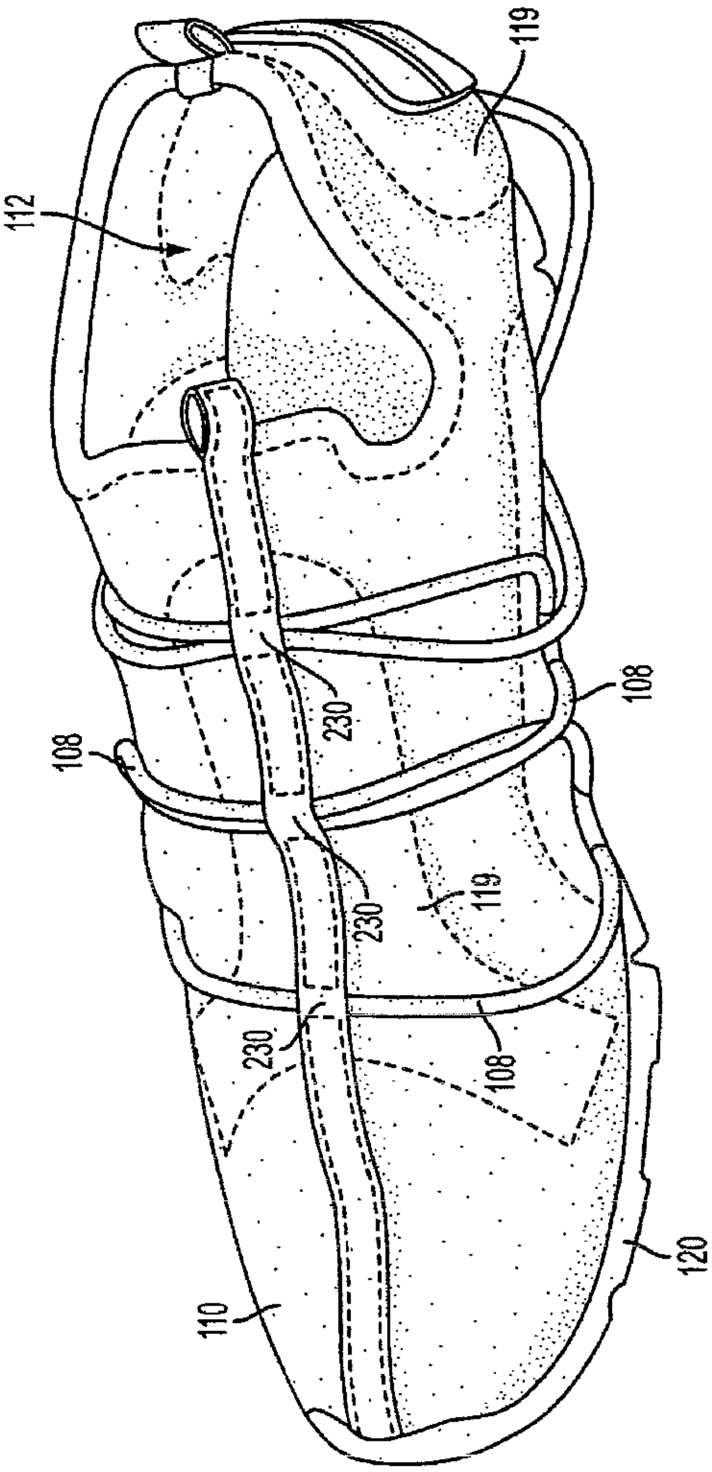

119
112
230
108
230
108
119
230
230
108
120
110

FIG. 2

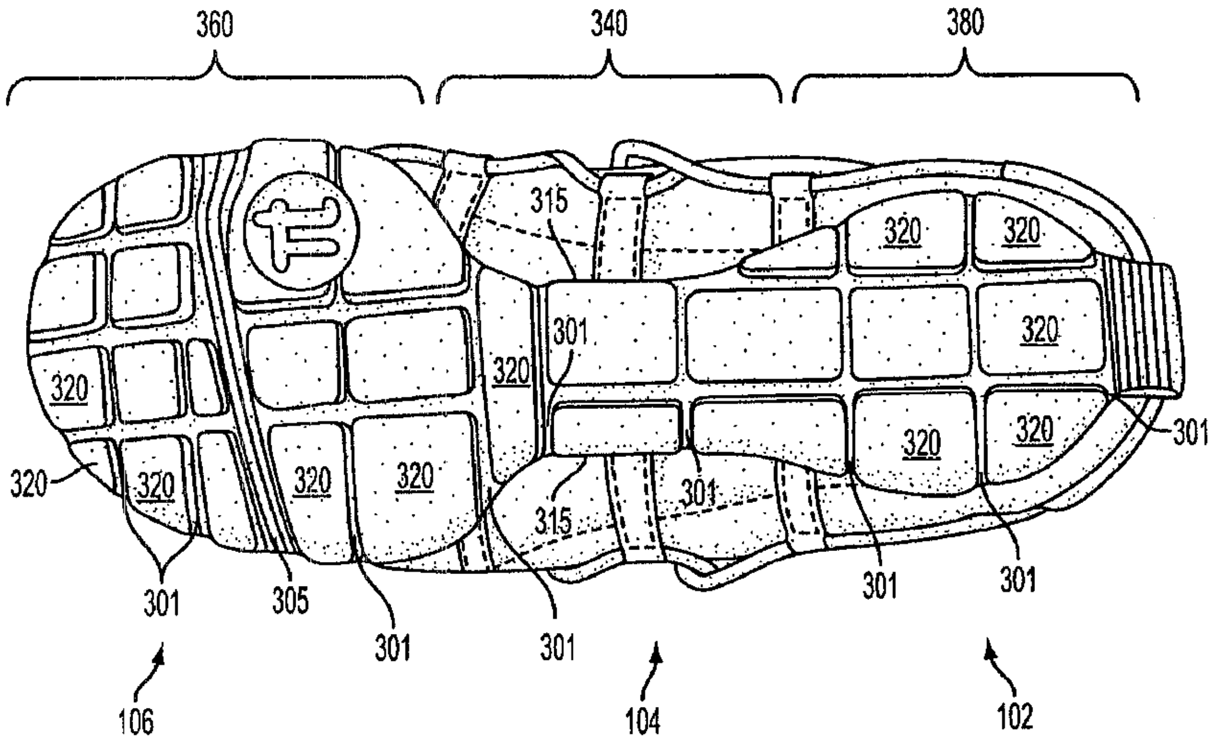

360
340
380
315
301
320
305
315
106
104
102

FIG. 3

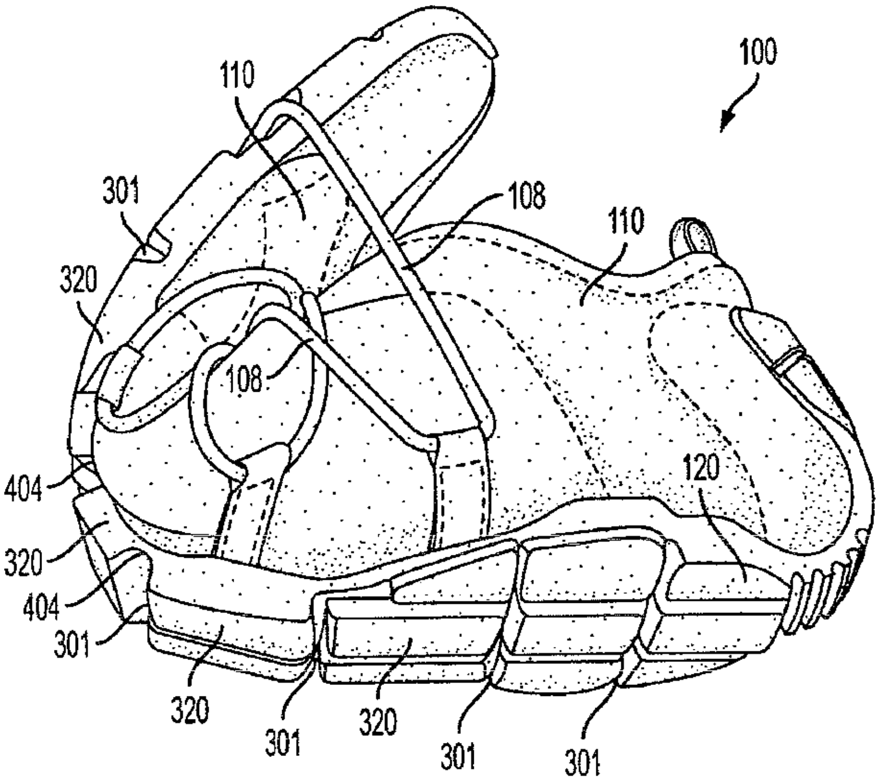
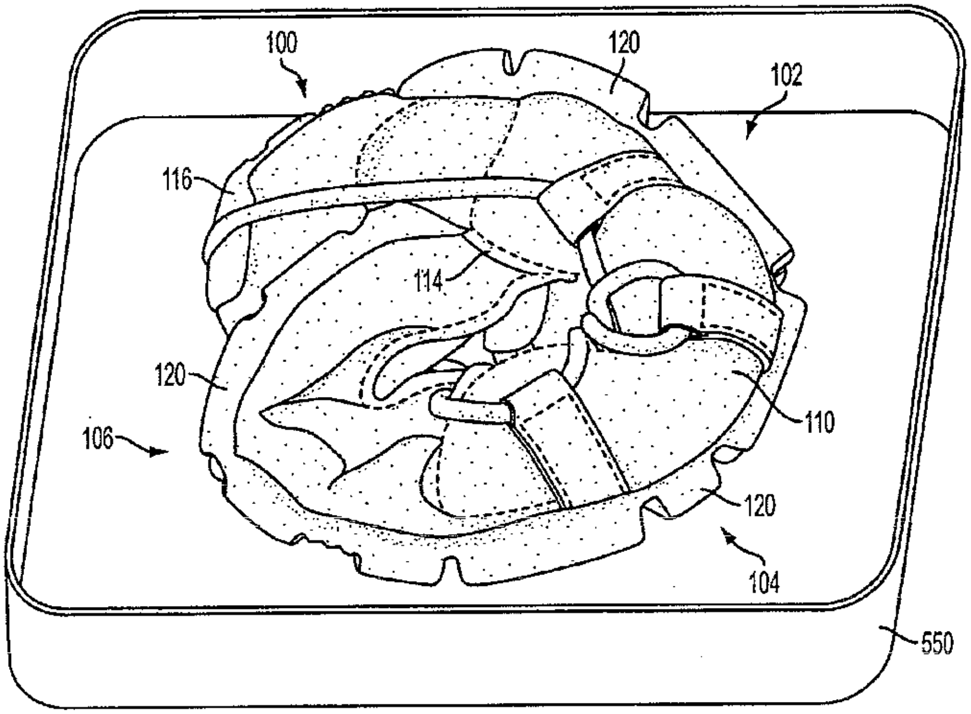

100
110
108
110
301
320
108
404
120
320
404
301
320
301
320
301
301

FIG. 4



100
120
102
116
114
120
110
106
120
104
550

FIG. 5

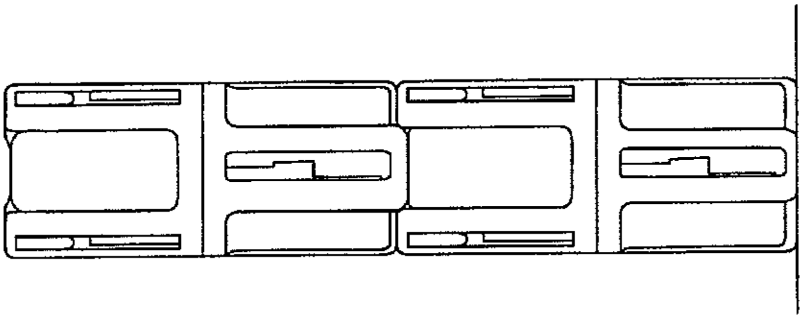


FIG. 6C

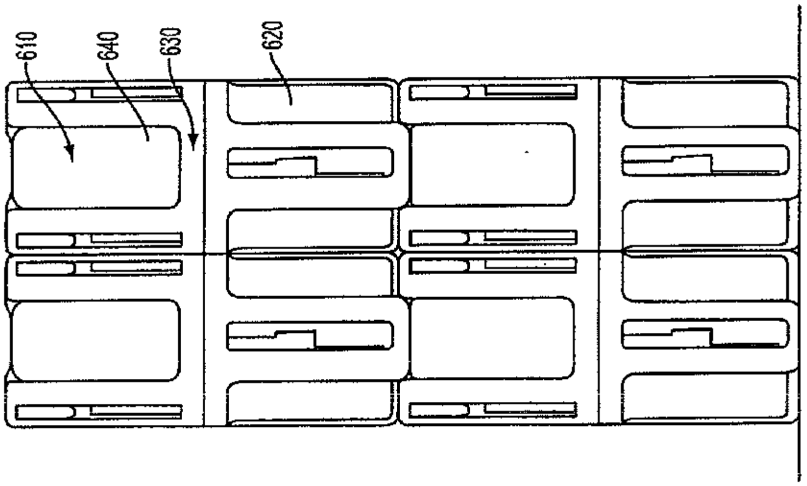

610
640
630
620

FIG. 6B

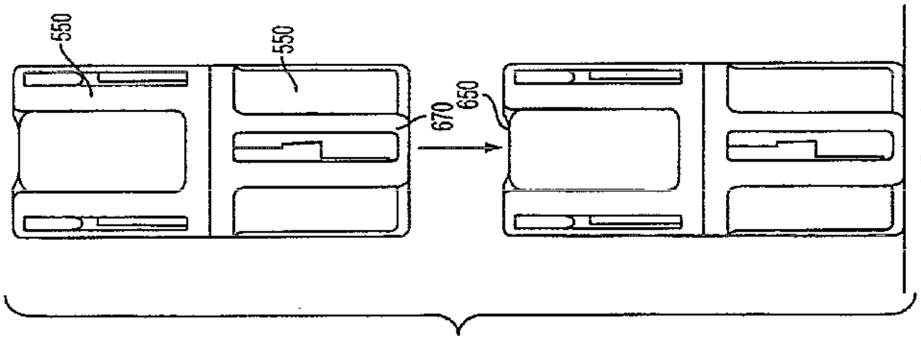
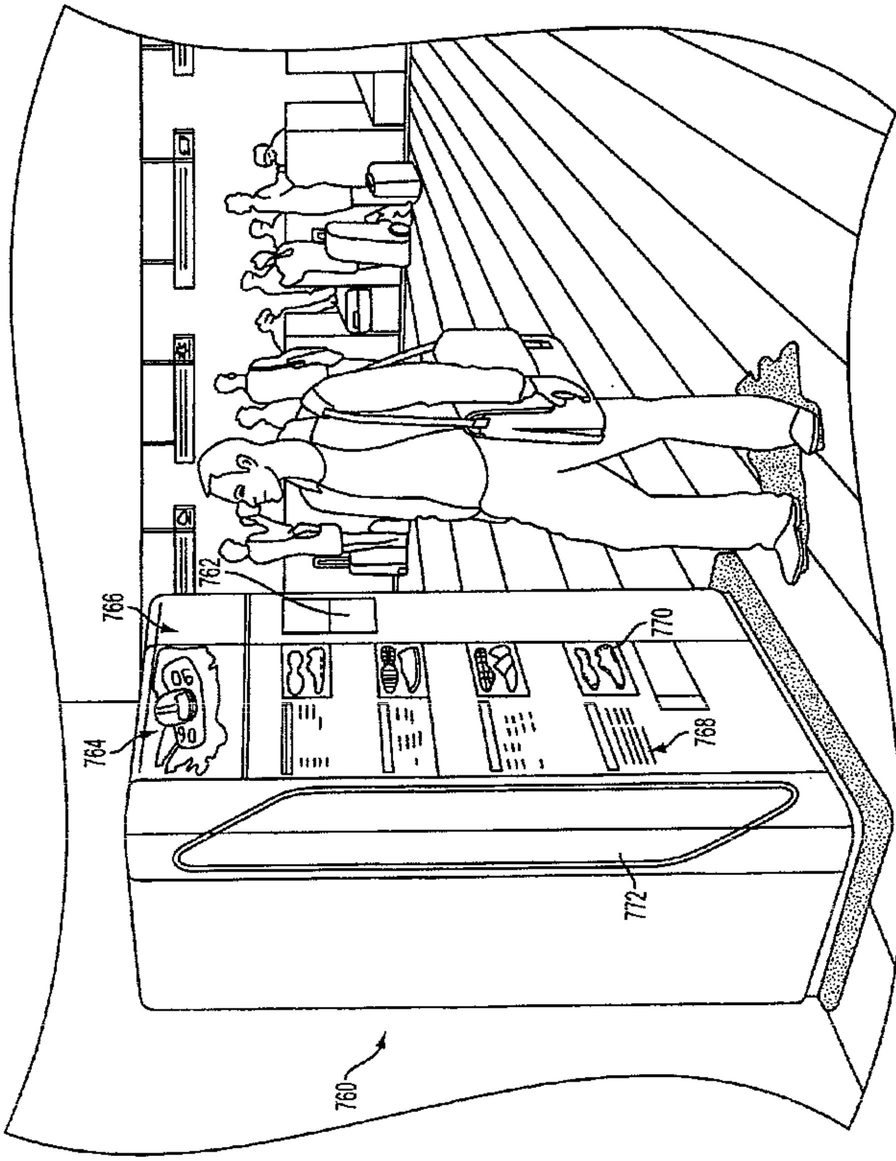

550
550
670
650

FIG. 6A



760
762
764
766
768
770
772

FIG. 7

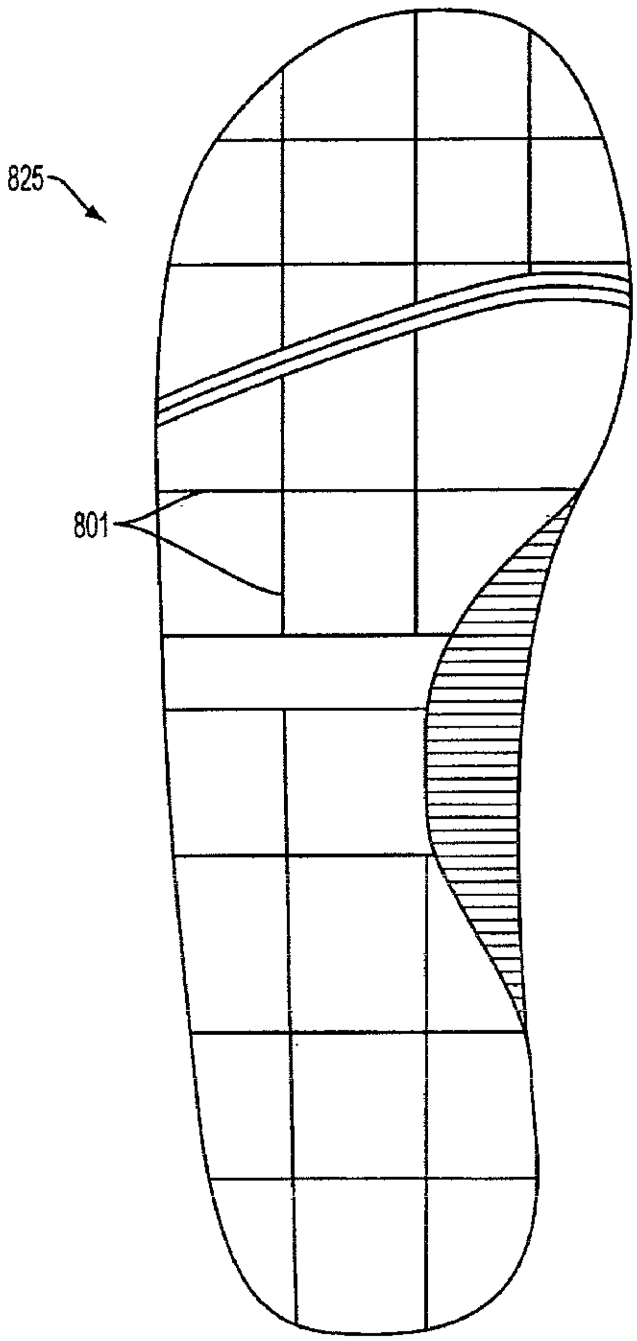


FIG. 8

COLLAPSIBLE SHOE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to footwear, and more particularly to a collapsible article of footwear, a dispensing apparatus for dispensing footwear, and a method of selling footwear.

2. Background Art

Throughout the course of an average day, the feet and legs of an individual are subjected to substantial impact forces. Running, jumping, walking and even standing exert forces upon the feet and legs of an individual which can lead to soreness, fatigue, and injury. These forces are particularly harsh during concentrated periods of athletic activity or exercise.

Although the human foot possesses natural cushioning and rebounding characteristics, the foot alone is incapable of effectively overcoming many of the forces encountered during athletic activity. Unless an individual is wearing shoes which provide proper cushioning and support, the soreness and fatigue associated with athletic activity is more acute, and its onset accelerated. This results in discomfort for the wearer which diminishes the incentive for further athletic activity. Equally important, inadequately cushioned footwear can lead to injuries such as blisters, muscle, tendon and ligament damage, and bone stress fractures. Improper footwear can also lead to other ailments, including back pain. Thus, it is essential to have cushioning and supporting footwear when engaging in athletic activity. Proper footwear should complement the natural functionality of the foot, in part by incorporating a sole which absorbs the shock caused by athletic activity and supports the natural shape of the foot. However, the sole should also possess enough resiliency to prevent the sole from being "mushy" or "collapsing," thereby unduly draining the energy of the wearer.

Athletic shoes that attend to these features tend to be bulky and sometimes heavy. It is not always feasible to carry a pair of bulky athletic shoes for the purpose of later envisioned athletic activity, particularly if the wearer has a large shoe size. A person may be prevented from performing a desired athletic activity due to the unavailability of proper footwear. In particular, space and weight constraints often limit taking along multiple pairs of shoes while on travel. Often wearers are forced to carry lighter and less bulky foot apparel, such as sandals with a durable sole for athletic activity while traveling. However, sandals may not provide the necessary support. In addition, they leave most of the foot exposed are thus unsuitable for use in colder climates or in places where foot exposure could be dangerous. In addition, the exposure of a sandal does not allow for the additional cushioning and comfort of an upper or a sock liner included with a conventional athletic shoe. A sock worn with a sandal may still not provide sufficient protection from such exposure or be aesthetically pleasing to wear. Furthermore, athletic shoes may be lost, stolen or forgotten while away from home and thus preclude any desired athletic activity.

Accordingly, what is needed is a durable and resilient athletic shoe which is able to provide proper support and cushioning to the foot, but which is also able to be reduced to smaller dimensions so that it may be easily stored, packed or distributed. It is desired that such a shoe be inexpensive to manufacture. Furthermore, it is desirable for such shoe be available in a convenient forum and sold using a method convenient for an on-the-go consumer.

BRIEF SUMMARY OF THE INVENTION

The present invention resolves the above stated problems by providing an article of footwear that includes an upper formed of a flexible, light-weight, breathable upper material, such as a breathable mesh material, and a sole formed of a lightweight, flexible sole material, such as blend of rubber and ethyl vinyl acetate (EVA). The shoe may also have an adjustable network of elastic piping or other closure system to fit snugly against a variety of foot sizes and shapes. The flexible sole and upper allows the article of footwear to be rolled, folded or collapsed on itself so that the article of footwear may be easily stored, packed or distributed. The article of footwear may be folded and stored in a plastic case. The article of footwear may be conveniently sold in areas frequented by those who have left or forgotten athletic shoes while traveling such as airports, train stations, and hotels. It can be used for light workouts because of the support and cushioning of its sole and its flexible fitting, and may also be used as a relaxing or walking shoe. Such a collapsible shoe provides convenience because of its minimal dimensions.

BRIEF DESCRIPTION OF THE DRAWINGS/FIGURES

The foregoing and other features and advantages of the present invention will be apparent from the following, more particular description of a preferred embodiment of the invention, as illustrated in the accompanying drawings in which:

FIG. **1** is a side view of a shoe incorporating the present invention;

FIG. **2** is a top view of the upper of the shoe shown in FIG. **1**;

FIG. **3** is a bottom view of the sole of the shoe shown in FIG. **1**;

FIG. **4** is a side view of the shoe of FIG. **1** shown partially collapsed;

FIG. **5** is a top view of a storage container according to the present invention with a shoe of the present invention shown collapsed and stored therein;

FIGS. *6a–c* are front views of stacked storage containers according to the present invention in which a shoe of the present invention may be stored or dispensed; and

FIG. **7** is a perspective front view of a vending machine according to the present invention for dispensing a shoe of the present invention.

FIG. **8** is a perspective bottom view of a sock liner according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

A preferred embodiment of the present invention is now described with reference to the Figures, in which like reference numerals are used to indicate identical or functionally similar elements. Also in the Figures, the left most digit of each reference numeral corresponds to the Figure in which the reference numeral is first used. While specific configurations and arrangements are discussed, it should be understood that this is done for illustrative purposes only. A person skilled in the relevant art will recognize that other configurations and arrangements can be used without departing from the spirit and scope of the invention. It will be apparent to a person skilled in the relevant art that this invention can also be employed in other applications.

The medial side of a shoe for a right foot according to the present invention is shown generally at **100** in FIG. **1**. A corresponding shoe for the left foot would be a mirror image of shoe **100** as would be apparent to one of skill in the art and therefore, is not shown or described herein. As shown in FIG. **1**, shoe **100** has a heel area shown generally at **102**, an arch area shown generally at **104** and a forefoot area shown generally at **106**. Shoe **100** is comprised of an upper **110** and a sole **120**. FIG. **2** is a top view of shoe **100** showing upper **110**. FIG. **3** is a bottom view of shoe **100** showing sole **120**.

Upper **110** is made from a durable and stretchable material such that it provides adequate support to the foot but is flexible enough to be compressed when shoe **100** is collapsed. It is also desirable that the material be breathable to allow air to circulate through the upper without exposing the foot to cold or dangerous elements. A breathable fabric will also allow perspiration of the foot to evaporate and escape. Further, it is desirable that the material be lightweight. In a preferred embodiment, upper **110** is made of a breathable mesh material. In alternate embodiments, upper **110** may be made of any suitable, breathable and stretchable materials, such as spandex, cotton, or the like or combinations thereof or other suitable, stretchable and flexible materials, such as neoprene, as would be apparent to one skilled in the relevant art. Upper **110** may also have at least one padded area **119** with additional layers of the upper material or a lining material to give depth and dimension to the otherwise flexible upper. Padded area **119** may include an inner lining material and a stuffing material or may be several layers that are quilted with additional stitching, for the added comfort of the wearer.

Upper **110** has an ankle opening shown generally at **112**, which is designed to receive a wearer's foot. Alternatively, upper **110** may be a conventionally-shaped upper, such as one that contains a conventional tongue.

In a preferred embodiment, shoe **100** includes lacing **108**. Preferably, lacing **108** is an adjustable network of elastic piping to allow shoe **100** to fit snugly against a variety of foot sizes and shapes while providing some flexibility as the foot moves through each step. As shown in FIG. **1**, lacing **108** may be looped through straps **109**. As shown in FIG. **2**, shoe **100** may also comprise optional straps **230** along the top of the upper to assure lacing **108** applies pressure in the most desired places on the foot. Flexible lacing **108** also allows ankle opening **112** to expand for the entrance of the foot and then contract pulling upper **110** against the foot to provide support.

A slide connector (not shown) may be employed to cinch together a portion of lacing **108**. Such a slide connector may cinch any amount of lacing **108** to adjust the fit of the shoe **100** by drawing the lacing more tightly against the foot. In alternate embodiments, shoe **100** may be tied using conventional lacing made from conventional lacing material or elastic lacing (with or without the use of eyelets), velcro, or another means of attachment that would be apparent to one skilled in the relevant art.

As shown in FIG. **1**, a preferred embodiment of shoe **100** further includes a toe plate **114** and a heel plate **116** to provide durability and stability to shoe **100**. Preferably, toe plate **114** and heel plate **116** are made from the same material as that used for the flexible sole **120**, as discussed below. Alternatively, one or both of the toe plate **114** and heel plate **116** may be made from a different resilient and flexible material, such as thermoplastic polyurethane (TPU) or other material as would be apparent to one skilled in the relevant art. In alternate embodiments, shoe **100** may be constructed without toe plate **114** and/or heel plate **116**. Additionally, shoe **100** could alternately include any number of supporting plates or other supporting structures located elsewhere on shoe **100**, such as adhered to or stitched onto upper **110**. In one embodiment, such plates may form a type of exoskeleton around flexible upper **110**.

Heel plate **116** may include a groove **123** through which lacing **108** wraps around the user's heel for a snug fit. Alternatively, heel plate **116** may include a conventional hook or loop (not shown) through which lacing **108** is held in place. Further, a strap similar to strap **109** may be sewn directly onto the upper in the general location of heel plate **116** to allow lacing **108** to pass therethrough. Heel plate **116** may be molded directly with sole **120** or it may be attached to the sole **120** and/or upper **110** separately. In a preferred embodiment, heel plate **116** is formed in a unitary structure with sole **120** and is connected by a connection plate **121**, which includes a series of grooves **125**. Grooves **125** allow connection plate **121** to bend up from sole **120** along the back of shoe **100** and connect to heel plate **116**. In this position, heel plate **116** can provide support to the ankle and heel of a user's foot.

Upper **110** is coupled to sole **120**. Additionally, a sock liner may be added inside shoe **100** between the wearer and sole **120**, as would be apparent to one skilled in the art. In a preferred embodiment, as discussed below, the sock liner has flexure points that correspond with flexure points located on the sole **120**. The sock liner bends at these flexure points so as not to impede the ability of shoe **100** to roll or fold into a compact and collapsed state.

Sole **120** is preferably made of a flexible, lightweight and durable foam material. More preferably, the sole of the present invention is a lightweight foam material composed of a mixture of ethyl vinyl acetate (EVA), rubber and other compounds, such as the 3D Ultralite material, which is available from The Reebok Company, Canton, Mass. The 3D Ultralite material is a unique mix of polymers that provide good cushioning and prevention of friction, while being lightweight and very flexible while offering excellent road feel, traction, and superior shock absorption. It is preferred that sole **120** is made from a single material so that the construction process is simple. While typical rubber soles slap the pavement, foam outsoles conform to the road for a smoother, more comfortable feel during a typical gait cycle. This material allows sole **120** to provide cushioning and support without the need for a bulky conventional midsole material. Generally, sole **120** should be made of a material which provides full support with a thinner sole which can be easily rolled or folded into a compact shape.

In alternate embodiments, sole **120** may be made of other flexible foam materials or any other suitable flexible material which is lightweight and durable, such as rubber, as would be apparent to one skilled in the relevant art.

As shown in FIG. **3** sole **120** has a relatively flat tread. Alternatively, sole **120** may have anther desired type of tread as would be apparent to one skilled in the art. Further, sole **120** has cut away portions **315** substantially located at the arch area **104** of the shoe. These cut-away portions **315** narrow sole **120** in the arch area. Nonetheless, the material used to construct sole **120** in combination with a sock liner and heel plate **116**, as discussed above, provide full support and cushioning for the foot during athletic activity. Further, the cut-away portions **315** of sole **120** reduce the amount of material in the shoes making it possible to roll or fold shoe **100** even more compactly.

As seen in FIG. **3**, sole **120** has a plurality of flexure lines **301**, which allow sole **120** to flex and curve. The flexible material of sole **120** allows sole **120** to roll to some extent on its own, but the flexure lines **301** divide the sole into a plurality of sole plates **320** which individually curve around the outside of shoe **100** when in a collapsed state. For example, FIG. **4** shows sole **120** partially rolled or folded onto itself. Lacing **108** and flexible upper **110** are collapsed upon each other, such that flexible sole **120** envelopes the upper **110** and lacing **108**. As shoe **100** is rolled, each flexure line **301** allows sole plates **320** to move apart from each other around the outside of the collapsed shoe, as seen at flexure points **404** of FIG. **4**, providing more flexibility in sole **120** and a more compact collapsed state for shoe **100**. As shown in FIG. **1** and FIG. **4**, in one embodiment, a portion of sole **120** is divided by flexure lines **301**, and a remaining portion of sole **120** that is positioned adjacent the upper is not divided by flexure lines **301**. A thickness of the portion of the sole not divided by flexure lines **301** (that extends between the upper and the portion of sole **120** divided by flexure lines **301**) may vary longitudinally. For example, in FIG. **1** and FIG. **4**, the thickness of the portion of the sole not divided by flexure lines **301** is greater in both the forefoot area **106** and heel area **102** than in arch area **104**.

Since FIG. **4** shows a shoe **100** that is only partially collapsed, only the sole plates **320** at flexure points **404** are being affected. However, when all of the sole plates **320** along the length of shoe **100**, as shown in FIG. **3**, are affected, shoe **100** may be rolled more compactly than that shown in FIG. **4**. For example, FIG. **5**, shows shoe **100** wherein sole **120** is rolled or folded roughly into thirds. FIG. **5** shows forefoot area **106** sandwiched between heel area **102** and arch area **104**. Alternatively, heel area **102** may be sandwiched between forefoot area **106** and arch area **104**. Further, shoe **100** may have a cylindrical-shape rather than the flattened sandwich-shape seen in FIG. **5**. As discussed earlier, shoe **100** may also include a sock liner with corresponding flexure lines which bend along with sole **120** so as to create a compact shoe. FIG. **8** shows a sock liner **825** having flexure lines **801** which correspond with flexure lines **301** of sole **120** illustrated in FIG. **3** and further described below.

Sole **120** may comprise one flexure line **301** or more, provided that such flexure line(s) **301** allow shoe **100** to be folded. The more flexure lines that divide sole **120** and the more plates **320** that are created, the more compact sole **120** can become when rolled or folded. For example, one embodiment may have a first flexure point formed from a first flexure line and a second flexure point formed from a second flexure line, so that shoe **100** can be rolled or folded roughly into thirds, similar to the shoe **100** shown in FIG. **5**. However, preferably, a greater number of flexure lines **301** are utilized, as seen in FIG. **3**. In the embodiment shown in FIG. **3**, flexure lines **301** of sole **120** include flexure lines that extend longitudinally along the length of the sole and flexure lines that extend laterally from the medial side to the lateral side of sole **120**. In FIG. **3**, a first longitudinally extending flexure line is positioned closer to the lateral side of shoe **100** than the medial side of shoe **100** and extends through substantially an entire length of sole **120**. A second longitudinally extending flexure line in the forefoot of sole **120** is positioned between the first flexure line and the medial side of sole **120** and extends through only a portion of sole **120**. As shown, a width of flexure line **305** that extends laterally from the medial side to the lateral side of sole **120** is greater than a width of the flexure lines that extend longitudinally along the length of the sole. FIG. **5** shows upper **110** and lacing **108** enveloped by sole **120**. In an alternative embodiment, however, shoe **100** may be rolled

or folded in the other direction, such that sole **120** is enveloped by upper **110** and lacing **108**.

Further, FIG. **3** shows a larger flexure line **305** located diagonally across the width of sole **120**, generally where a user's toes bend at the end of a typical gait cycle. The larger flexure line **305** provides additional flexibility at this point to provide additional comfort while the foot is in motion. Further, when shoe **100** is rolled or folded starting with the forefoot area **106**, the larger flexure line **305** allows the forefoot area to collapse even deeper into the roll of sole **120**.

In practice, no matter how the shoe is rolled or compacted, sole **120** has a natural state which is generally flat. Consequently, sole **120** will naturally unroll unless it is held in a compact state, such as by placing shoe **100** into a container. FIG. **5** shows a collapsed shoe **100** fit into a container **550**. Container **550** can be easily packed or stored in any convenient location such as a bag, pocket or suitcase. When removed from container **550**, sole **120** will automatically unroll to a generally flat natural state.

Preferably, container **550** is large enough to store a pair of shoes **100** packaged together. When left and right shoes **100** are rolled or folded into a compact state, the left and right shoe may stored together in a compact manner in container **550**. As seen in FIG. **3**, sole **120** has a larger portion **360** generally located in forefoot area **106**, a narrower portion **340** generally located in arch area **104** formed from the cut-away portions **315**, and a mid-sized portion **380** generally located in heel area **102**.

Left and right shoes **100** may be stored side-by-side, such that the larger portion **360** of either the left or right shoe is generally adjacent to the narrower portion **340** of the other of the left or right shoe. In this arrangement, the larger portion **360** of one shoe fits into the cut-away portion **315** of the narrower portion **340** of the other shoe, thereby reducing the amount of space necessary to store a single pair of shoes. Alternatively, the left and right shoe may be packaged one on top of the other, or such that the heel of one shoe is interlocked into the folded portion of the other shoe to form an S-shape with the two shoes. Other methods can also be used to arrange a left and a right shoe **100** within container **550** in a compact manner, as would be apparent to one skilled in the art.

Container **550**, as shown in FIGS. **5** and **6**_a_–**6**_c_, is preferably a rectangular case, although in alternate embodiments container **550** may be square, circular, cylindrical or otherwise shaped as would be apparent to one skilled in the relevant art. FIGS. **6**_a_–**6**_c_, shows an outside view of several identical containers **550** stacked together. Preferably, containers **550** are stackable with each other. In a preferred embodiment container **550** may be a plastic container. In alternate embodiments, container **550** may be made of any sufficiently durable material, as would be apparent to one skilled in the relevant art. Further, as seen in FIGS. **6**_b_ and **6**_c_, containers **550** may be a variety of colors.

FIG. **6**_b_ shows stackable containers **550** having a first side **610** and a second side **620**. Container **550** may have a clear portion **640** through which the collapsed shoe may be seen. First side **610** may also have an opaque portion, such as area **630**. The opaque portion may have a conventional, plastic, sandblasted texture. However, as discussed above, container **550** may have a variety of outward appearances. Preferably, as seen in FIG. **6**_a_, stackable containers **550** have a female end **650** and a male end **670**, such that, when stacked, the container temporarily interlock. Stackable containers **550** allow collapsed shoe **100** to be stored in a more compact manner. Further, stackable containers **550** are convenient for dispensing from a dispensing apparatus, such as vending machine **760**, of the present invention as discussed below. FIGS. *6a*–*6c* show that female end **650** and male end **670** interlock when first side **610** of one container **550** faces the same direction as the second side **620** of its adjacent container **550**. Any interlocking and/or stackable containers may be used that provide for compact storage of collapsible shoes as would be apparent to one skilled in the art.

A variety of dispensing apparatus would be appropriate for dispensing the collapsible shoe of the present invention. For example, FIG. **7** shows a preferred vending machine **760**. Vending machine **760** could be located in an urban area frequented by travelers such as an airport, a rail station, or a hotel. Other locations may include a mall, a health club, or any other area where distributing athletic shoes or other athletic apparel could be useful and convenient.

In a preferred embodiment such as the embodiment shown in FIG. **7**, vending machine **760** may include a credit card swipe or conventional means of accepting currency, such as a bill acceptor and coin slots, and a receipt provider located anywhere on the machine, preferably in the area **762**. Vending machine **760** also may include a screen **764**, which may be connected to the internet or other online computer system or a local computer system or other video distribution means such as a VCR. Screen **764** may display commercials or other messages that could be uploaded daily and be market specific. Preferably, the internet connection is a broadband, hi-speed internet connection to avoid requiring a modem or dial-up service to the vending machine **760**. A dedicated connection would require less human operation and interaction with the vending machine **760**.

Additionally, an internet connection may provide a feature wherein, if a desired product is not available, vending machine **760** will automatically connect to a warehouse for overnight delivery of the product to the user's destination. Further, the user may be able to pay for this service via the currency reader or credit card swipe located on the vending machine. Screen **764** may also provide step-by-step instruction on the use of vending machine **760**. In a preferred embodiment, vending machine **760** may have audio capability, preferably located in the area **766** to provide audio instructions or descriptions of options for consumers and to provide sound that corresponds to the images displayed on screen **764**. Panel **772** may be reverse printed with market specific imagery. Alternatively, images may be inserted into panel **772** so that they can be periodically changed, using techniques known for conventional vending machines.

Vending machine **760** may also have product descriptions **768** and colored images **770**, which display the variety of colors and sizes available at one or more vending machines **760** located in the same vicinity. Vending machine **760** could also dispense other products, such as T-shirts, athletic shoes or pants, socks, sports bras, other athletic apparel, or various food or drink products.

While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that they have been presented by way of example only, and not limitation, and various changes in form and details can be made therein without departing from the spirit and scope of the invention. Thus, the breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents. Additionally, all references cited herein, including issued U.S. patents, or any

other references, are each entirely incorporated by reference herein, including all data, tables, figures, and text presented in the cited references.

The foregoing description of the specific embodiments will so fully reveal the general nature of the invention that others can, by applying knowledge within the skill of the art (including the contents of the references cited herein), readily modify and/or adapt for various applications such specific embodiments, without undue experimentation, without departing from the general concept of the present invention. Therefore, such adaptations and modifications are intended to be within the meaning and range of equivalents of the disclosed embodiments, based on the teaching and guidance presented herein. It is to be understood that the phraseology or terminology herein is for the purpose of description and not of limitation, such that the terminology or phraseology of the present specification is to be interpreted by the skilled artisan in light of the teachings and guidance presented herein, in combination with the knowledge of one of ordinary skill in the art.

What is claimed is:

1. An article of footwear comprising:

an upper;

a sole adjacent said upper; and

a sock liner disposed in said article of footwear;

wherein said sole and said sock liner have corresponding flexure lines, said flexure lines including:

a first flexure line in said sole that extends longitudinally through substantially an entire length of the sole and a first flexure line in said sock liner which corresponds with said first flexure line in said sole;

a second flexure line in said sole that extends longitudinally through only a portion of the length of the sole and a second flexure line in said sock liner which corresponds with said second flexure line in said sole; and

a plurality of third flexure lines in said sole that extend laterally from a medial side to a lateral side of the sole and a plurality of third flexure lines in said sock liner which correspond with said third flexure lines in said sole.

2. The article of footwear recited in claim **1**, wherein a width of at least one of the third flexure lines in said sole is greater than a width of the first flexure line in said sole and is greater than a width of the second flexure line in said sole.

3. The article of footwear recited in claim **1**, wherein said sole includes a portion divided by said flexure lines and a portion not divided by said flexure lines, wherein said portion not divided by said flexure lines is positioned adjacent the upper.

4. The article of footwear recited in claim **3**, wherein a thickness of said portion of said sole not divided by said flexure lines varies longitudinally.

5. The article of footwear recited in claim **4**, wherein the thickness of said portion of said sole not divided by said flexure lines varies between a forefoot region and a heel region of the sole.

6. The article of footwear recited in claim **1**, wherein the first flexure line in said sole is positioned closer to a lateral side of the sole than a medial side of the sole in a forefoot region of the sole.

7. The article of footwear recited in claim **1**, wherein said sole is formed of a unitary construction from a polymer foam material.

8. The article of footwear recited in claim **1**, wherein said sole has an upper surface and a lower surface, and said flexure lines extend upward from the lower surface and through at least half of a distance between the lower surface and the upper surface in an arch area of said sole.

9. The article of footwear recited in claim 8, wherein the flexure lines in said sole are substantially perpendicular to the lower surface of the sole.

10. The article of footwear recited in claim 1, wherein the second flexure line in said sole is positioned between the first flexure line in said sole and a medial side of the sole.

11. An article of footwear comprising:

an upper;

a sole structure, the sole structure comprising a connecting portion positioned adjacent the upper and a plurality of discrete sole elements extending downward from the connecting portion, the sole elements being separated by a plurality of flexure lines that extend upward into the sole structure; and

an insole having a plurality of flexure lines that correspond with positions of at least a portion of the flexure lines that extend upward into the sole structure, wherein the flexure lines include:

a first flexure line in said sole structure that extends longitudinally through substantially an entire length of the sole structure and a first flexure line in the insole which corresponds with said first flexure line in said sole structure;

a second flexure line in said sole structure that extends longitudinally through only a portion of the length of the sole structure and a second flexure line in the insole which corresponds with said second flexure line in said sole structure; and

a plurality of third flexure lines in said sole structure that extend laterally from a medial side to a lateral side of the sole structure and a plurality of third flexure lines in the insole which correspond with said third flexure lines in said sole structure.

12. The article of footwear recited in claim 11, wherein a width of at least one of the third flexure lines in said sole structure is greater than a width of the first flexure line in said sole structure and is greater than a width of the second flexure line in said sole structure.

13. The article of footwear recited in claim 11, wherein the thickness of the connecting portion varies between a forefoot region and a heel region of the sole.

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